

REMARKS

In the August 17, 2010 Office Action, all of pending claims 1 and 4-6 stand rejected in view of prior art. No other objections or rejections were made in the Office Action.

Status of Claims and Amendments

In response to the August 17, 2010 Office Action, Applicant has cancelled claims 1 and 4 as indicated above. None of the claims are being amended by the current Amendment. Thus, claims 5 and 6 are pending, with claims 5 and 6 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Rejections - 35 U.S.C. § 103

Pages 2-10 of the Office Action,

- (1) Claim 1 is rejected as being unpatentable over U.S. Patent No. 4,717,316 to Muramatsu in view of U.S. Patent No. 3,936,205 to Speakman;
- (2) Claim 2 is rejected as being unpatentable over the combination of references of rejection (1) in further view of U.S. Patent No. 5,666,015 to Uchibori et al.;
- (3) Claim 5 is rejected as being unpatentable over the combination of references in rejection (2) in further view of U.S. Patent No. 3,505,923 to Neill, and JP45026515 to Tajima or JP20010515 to Takayama; and
- (4) Claim 6 is rejected as being unpatentable over the combination of references of rejection (1) in further view of U.S. Patent No. 3,505,923 to Neill, and JP45026515 to Tajima or JP20010515 to Takayama.

In response, Applicant has cancelled claims 1 and 4 and respectfully traverses the rejections of claims 5 and 6, as explained below.

PATENTABILITY OF CLAIMS 5 and 6

The claimed cone-shaped recess of the projection (set forth in independent claims 5 and 6) allows the projected part of the projection to be deformed when crushing the projection, to reduce and disperse radial and axial stresses on the projection to thereby prevent the projection from breaking. See paragraph [0029] of the instant application.

The office Action acknowledges that the Muramatsu patent lacks such a recess, but relies on Speakman, Neill, and Tajima or Takayama in combination to allegedly disclose such a cone-shaped recess. Uchibori is merely relied upon to disclose an aluminum projection. Applicants disagree that these references would be combined as indicated in the Office Action to result in the unique arrangements of the claims.

Regarding Speakman

The cone-shaped recess 41 of Speakman is intended to function as an identifier or a center (see col. 4, lines 19-22). Thus, even though Speakman is combined with Muramatsu by providing the recess 41 as taught by Speakman on the projection of Muramatsu, it is impossible to obtain the function of the claimed cone-shaped recess of claims 5 and 6 because the recess of Speakman is not sized as claimed. Also, like Neill, discussed below, the recess in Speakman is formed in an end of the pin which is not expanded to retain the parts, and thus, would not be formed in the expanded upper end of the pins of Muramatsu. The expanded lower end 14 (i.e., the part equivalent to the upper end in Muramatsu) of the pin 10 in Speakman lacks a recess whatsoever.

Regarding Neill

Neill's recesses 40, 36 are not provided on a top surface of the projections. Therefore, Neill's recesses 40, 36 do not meet the claimed features that "a projection with a cone-shaped recess on an upper face of the projection" (claims 5 and 6), "crushing a projected part of the projection ...except for a portion of the cone-shaped recess on the projection" (claim 5), "the projection being crushed ..., a bottom portion of the cone-shaped recess exists/existing in a state of the projection being crushed" (claims 5 and 6).

Neill's arrangement requires a recess 18 on an upper surface of a shank 10 and recesses 40 and 36 on a bottom of the shank 10. Thus, in order to employ the teaching of Neill in Muramatsu, the end ring 7 and the caulking pin 8 of Muramatsu should be separate parts, instead of being a one-piece structure. However, there is no teaching anywhere in

Muramatsu to form the end ring 7 and the caulking pin 8 as separate parts. In addition, if the Neill's teaching is employed in Muramatsu, the recesses 40 and 36 would have to be provided at a lower part of the caulking pin 8 of Muramatsu. In other words, the diameter of the bottom of the pins in Neill does not change, and thus, this bottom pin structure could not be used in the upper pin part of Muramatsu. Therefore, combining the teaching of Neill, with Speakman and Muramatsu as asserted in the Office Action results in a structure that is quite different from the claimed arrangement.

Regarding Tajima

Tajima's so-called cone-shaped recess 2 is merely a screw hole for receiving a screw 9. Because the so-called cone-shaped recess 2 is a screw hole, it goes through the projection 2, which protrudes from a plate 3, deeply into the base main body 1, i.e., much deeper than the claimed recess. Therefore, Tajima does not teach or suggest providing a recess having a shape and dimensions as defined in claims 5 and 6 in order to allow the projected part of the projection to be deformed when crashing the projection, to reduce and disperse radial and axial stresses on the projection to thereby prevent the projection from breaking. The recess of Tajima would have to keep such a depth (much larger than claimed) in order to achieve the purpose thereof (so the purpose of reattaching with a screw is not destroyed), which is also the alleged reason for combining this teaching of Tajima. However, if such a depth is maintained, the features of the claims are not met. If the depth is not kept, the alleged reason of the Office Action for using this recess is destroyed. Thus, the position with respect to this reference is untenable.

Regarding Takayama

Takayama shows in figure 10 a part which is a seemingly cone-shaped recess. That part, however, is a result of stretching a tip of a cylindrically molded extension 16 shown in figure 1. As is apparent, the extension 16 does not define a cone-shaped recess. Thus, the claimed features that "a projection with a cone-shaped recess on an upper face of the projection" (claims 5 and 6), "crushing a projected part of the projection ...except for a portion of the cone-shaped recess on the projection" (claim 5), "the projection being crushed ..., a bottom portion of the cone-shaped recess exists/existing in a state of the projection being crushed" (claims 5 and 6) are not met. In other words, as seen in Figures 2 and 10 of Takayama, the cone shaped recess is crushed and moved so that "crushing a projected part of

the projection from the through hole except for a portion of the cone-shaped recess on the projection by applying a downward pressing force to the projected part so as to integrate the plate member with the supporting base plate such that a bottom portion of the cone-shaped recess exists in a state of the projection being crushed” of claim 5 and “a bottom portion of the cone-shaped recess existing in a state of the projection being crushed” of claim 6 are not accomplished in this reference.

Regarding Tajiama and Takayama

The reason for including the recess 32 of Neill relied upon in the Office Action (see pages 5-6 of the Office Action) appears would be destroyed by modifying the shape of the recess based on these references. In other words, it is unclear how a change in size/shape of the recess of Neill would affect the force flow lines.

At least for the reasons above, combining any combination of Speakman, Neill, Tajiama, and Takayama with Muramatsu would not result in the subject matter of claims 5 and 6.

Under U.S. patent law, the mere fact that the prior art can be modified does **not** make the modification obvious, unless an **apparent reason** exists based on evidence in the record or scientific reasoning for one of ordinary skill in the art to make the modification. See, KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). The KSR Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had some “apparent reason to combine the known elements in the fashion claimed.” Id. at 1741. The current record lacks any apparent reason, suggestion or expectation of success for combining the patents to create Applicants’ unique arrangements of claims 5 and 6.

Prior Art Citation

In the Office Action, additional prior art references were made of record. Applicant believes that these references do not render the claimed invention obvious.

Appl. No. 10/587,451
Amendment dated November 17, 2010
Reply to Office Action of August 17, 2010

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In view of the foregoing amendment and comments, Applicant respectfully asserts that claims 5 and 6 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,

/Patrick A. Hilsmier/
Patrick A. Hilsmier
Reg. No. 46,034

GLOBAL IP COUNSELORS, LLP
1233 Twentieth Street, NW, Suite 700
Washington, DC 20036
(202)-293-0444
Dated: November 17, 2010

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